Maryland Historical Trust

Maryland Inventory of Historic Properties number: CAR-296

Name: MD 328 OVER TUCKAHOE RIVER.

The bridge referenced herein was inventoried by the Maryland State Highway Administration as part of the Historic Bridge Inventory, and SHA provided the Trust with eligibility determinations in February 2001. The Trust accepted the Historic Bridge Inventory on April 3, 2001. The bridge received the following determination of eligibility.

MARYLAND HISTORICAL TRUST

Eligibility Recommended _____ Eligibility Not Recommended __X____

Criteria: ____A ____B __X__C ____D Considerations: ___A ___B ___C ___D ___E ___F ___G __None

Comments: _____

_____

_____

Reviewer, OPS: _Anne E. Bruder_____ Date: __3 April 2001____

Reviewer, NR Program: __Peter E. Kurtze_____ Date: __3 April 2001____

MARYLAND INVENTORY OF HISTORIC BRIDGES **MHT No.** CAR-296
HISTORIC BRIDGE INVENTORY
MARYLAND STATE HIGHWAY ADMINISTRATION/
MARYLAND HISTORICAL TRUST

SHA Bridge No. 5012 **Bridge name** MD 328 over Tuckahoe River

LOCATION:
Street/Road name and number [facility carried] MD 328 (New Bridge Road)

City/town Denton **Vicinity** X

County Caroline

This bridge projects over: Road____ **Railway**_____ **Water** X **Land** ____

Ownership: State X **County** _____ **Municipal** _____ **Other** ___

HISTORIC STATUS:
Is the bridge located within a designated historic district? Yes _____ **No** X
National Register-listed district ____ **National Register-determined-eligible district** __
Locally-designated district _____ **Other** _____

Name of district _____

BRIDGE TYPE:
Timber Bridge _____:
Beam Bridge _____ **Truss -Covered** ___ **Trestle** ____ **Timber-And-Concrete** ____

Stone Arch Bridge _____

Metal Truss Bridge _____

Movable Bridge _____:
Swing _____ **Bascule Single Leaf** __ **Bascule Multiple Leaf** _____
Vertical Lift _____ **Retractile**_____ **Pontoon** _____

Metal Girder X_____:
Rolled Girder X____ **Rolled Girder Concrete Encased** _____
Plate Girder _____ **Plate Girder Concrete Encased** _____

Metal Suspension _____

Metal Arch _____

Metal Cantilever _____

Concrete _____:
Concrete Arch_____ **Concrete Slab**_____ **Concrete Beam** ____ **Rigid Frame** _____
Other _____ **Type Name** _____

DESCRIPTION:

Setting: Urban _____ **Small town** _____ **Rural** X

Describe Setting:

Bridge No. 5012 carries MD 328 (New Bridge Road) over the Tuckahoe River in Caroline County. MD 328 runs north-south and the Tuckahoe River flows east-west. The bridge is located in the vicinity of Denton, and is surrounded by a wooded area and some residential development.

Describe Superstructure and Substructure:

Bridge No. 5012 is a 20-span, 2-lane, metal girder bridge. The bridge was originally built in 1947, repairs to the substructure were conducted in 1982, and the deck was replaced on spans 1, 2, 5, 6, and 9, in 1984. The structure is 909 feet long with eleven (11) spans of 40 feet, eight (8) spans of 50 feet and a main channel span of 69 feet. It has a clear roadway width of 26 feet. The out-to-out width is 28 feet, 6 inches. The superstructure consists of five (5) rolled girders which support a concrete deck and a metal railing. The girders are spaced 6.04 feet apart and the roadway is carried on the girders. The concrete deck is 6.5 inches thick and it has a bituminous wearing surface. The structure has an open metal railing and the roadway approaches have steel guard rails. The substructure consists of twenty-one (21) pile bents, each comprising five (5) concrete piles, encased in fiberglass protective jackets. The sufficiency rating of the bridge is 52.4.

The most recent inspection report for the structure was not available at the time of the survey. At the time of a 1991 inspection, this structure was in generally good condition. With regard to the substructure, the report noted some section loss and deterioration of the pile bents. The superstructure also exhibited some section loss and the bearings required cleaning and painting.

Discuss Major Alterations:

Substructure repairs were performed after a 1982 inspection revealed severe deterioration to the steel monotube pile shells and the concrete fill material. In 1984, Bent 9, pile 5 was repaired and the deck in spans 1, 2, 5, 6, and 9 was replaced. In addition, all concrete end diaphragms and sliding plate joints were replaced with compression seals. In 1994, the piles were encased with fiberglass protective jackets.

HISTORY:

WHEN was the bridge built: 1947
This date is: Actual X **Estimated** _____
Source of date: Plaque _____ **Design plans** X **County bridge files/inspection form** _____
Other (specify) : State Highway Administration bridge files/inspection forms

WHY was the bridge built?

The bridge was constructed in response to the need for more efficient transportation network and increased load capacity. The structure replaced a timber bridge with a draw span, which crossed the Tuckahoe River north of the existing bridge. According to the 1946 design plans for the existing bridge, the timber bridge was in poor condition.

CAR-296

WHO was the designer?

State Roads Commission

WHO was the builder?

Unknown

WHY was the bridge altered?

The bridge was altered to ensure its structural integrity.

Was this bridge built as part of an organized bridge-building campaign?

There is no evidence that the bridge was built as part of an organized bridge building campaign.

SURVEYOR/HISTORIAN ANALYSIS:

This bridge may have National Register significance for its association with:
A - Events _____ B- Person _____
C- Engineering/architectural character _____

The bridge does not have National Register significance.

Was the bridge constructed in response to significant events in Maryland or local history?

Metal girder bridges were most likely introduced and first popularized in Maryland by the state's major railroads of the nineteenth century including the Baltimore and Susquehanna, its successor the Northern Central, and the Baltimore and Ohio Railroad. Bridge engineering historians have documented the fact that James Milholland (or Mulholland) erected the earliest plate girder span in the United States on the Baltimore and Susquehanna Railroad in 1846 at Bolton Station, near present-day Mount Royal Station. The sides (web) and bottom flange of Milholland's 54-foot-long span were wholly of wrought iron and included a top flange reinforced with a 12x12-inch timber. Plates employed in the bridge were 6 feet deep and 38 inches wide, giving the entire bridge a total weight of some 14 tons. Milholland's pioneering plate girder cost $2,200 (Tyrrell 1911:195). By December 31, 1861, the Northern Central Railroad, which succeeded the Baltimore and Susquehanna, maintained an operating inventory in Maryland of 50 or more bridges described simply as "girder" spans, in addition to a number of Howe trusses. Most of these were probably iron girder bridges; the longest were the 117-foot double-span bridge over Jones Falls and the 106-foot double-span girder bridge at Pierce's Mill (Gunnarson 1990:179-180).

As in the nation, girder bridge technology in Maryland was quickly adapted to cope with the increasingly heavy traffic demands of the twentieth century caused by automobile and truck traffic. The 1899 Maryland Geological Survey report on highways noted that "there are comparatively few I-beam bridges, one of the cheapest and best forms for spans less than 25 or 30 feet" (Johnson 1899:206). Interestingly, the report also urged construction of a composite metal, brick, and concrete bridge, noting that "no method of construction is more durable than the combination of masonry and I-beams, between which are transverse arches of brick, the whole covered with concrete, over which is laid the roadway" (Johnson 1899:206). Whether any such bridges (transitional structures between I-beams and reinforced concrete spans) were built is unknown.

Official state and county highway reports—issued between 1900 and the early 1920s through the Highway Division of the Maryland Geological Survey and its successor, the State Roads Commission—generally do not reference or describe girder construction. An analysis of the current statewide listing of county and municipal bridges (a listing maintained by the State Highway Administration) reveals that 48 county bridges, out of the total of 141 approximately dated to "1900" by county engineers, were listed as steel girder, steel stringer, or variants of such terms. (It should be noted that the "1900" date is often given when no exact date is pinpointed for a bridge that is clearly old). A grand total of 200 bridges (including "steel culverts"), out of 550 bridges dated on the county list between 1901 and 1930, were described as steel beam, steel girder, or steel stringer and girder varieties. The total suggests that among the various highway bridge types built in the early twentieth century metal girder bridges in Maryland between 1900 and 1930 were second in popularity only to reinforced concrete bridges. However, these numbers must be interpreted with caution, as they do not necessarily include all county and municipal bridges.

When the bridge was built and/or given a major alteration, did it have a significant impact on the growth and development of the area?

There is no evidence that the construction of this bridge had a significant impact on the growth and development of this area.

Is the bridge located in an area which may be eligible for historic designation and would the bridge add to or detract from the historic/visual character of the potential district?

The bridge is located in an area which does not appear to be eligible for historic designation.

Is the bridge a significant example of its type?

A significant example of a metal girder bridge must possess all character-defining elements of its type, and be readily recognizable as an historic structure from the perspective of the traveler. Distinctive features visible from the roadway approach, including parapet walls or railings, should retain their integrity. In addition, the structure must be in excellent condition. This bridge, which has had portions of the deck replaced and the concrete pile bents concealed with fiberglass protective jackets, is an undistinguished example of a metal girder bridge.

Does the bridge retain integrity of important elements described in Context Addendum?

The bridge retains some character-defining elements of its type, as defined by the Statewide Historic Bridge Context, including rolled longitudinal I-beams and a metal railing. The concrete pile bents have been concealed with fiberglass jackets.

Is the bridge a significant example of the work of a manufacturer, designer, and/or engineer?

This bridge is not a significant example of the work of a manufacturer, designer, and/or engineer.

Should the bridge be given further study before an evaluation of its significance is made?

No further study of this bridge is required to evaluate its significance.

BIBLIOGRAPHY:

County inspection/bridge files _____ **SHA inspection/bridge files** X

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Other (list):

Gunnarson, Robert
1990 *The Story of the Northern Central Railway, From Baltimore to Lake Ontario*. Greenberg Publishing Co., Sykesville, Maryland.

Johnson, Arthur Newhall
1899 The Present Condition of Maryland Highways. In *Report on the Highways of Maryland*. Maryland Geological Survey, The Johns Hopkins University Press, Baltimore.

Tyrrell, Henry G.
1911 *History of Bridge Engineering*. Published by author, Chicago.

SURVEYOR:

Date bridge recorded 2/25/97
Name of surveyor Caroline Hall
Organization/Address P.A.C. Spero & Co., 40 W. Chesapeake Avenue, Baltimore, MD 21204
Phone number (410) 296-1685 **FAX number** (410) 296-1670

Maryland Historic Highway Bridges
Bridge Type Metal Girder
MHT # CAR-296
Map Easton Map # G-15
County Caroline
Bridge # and name 5012/MD 328
over Tuckahoe Creek

CAROLINE CO.
TALBOT CO.
Cowards Point
Deep Creek
GRIFFIN
TUCKAHOE
BEESES LANDING ROAD
MATTHEWSTOWN ROAD
TURKEY CREEK
FOX ROAD
TRAILER PARK
TUCKAHOE SPRINGS
FOREST LANDING
Gilpin Point
328

1. Car-296
2. MD 328 over Tuckahoe Creek
3. Caroline Co, MD
4. Caroline Hall
5. 3/97
6. MDSHPO
7. north side
8. 1 of 6

1. Car-296
2. MD 328 over Tuckahoe Creek
3. Caroline Co, MD
4. Caroline Hall
5. 3/97
6. MDSHPO
7. north side
8. 1 of 6


TUCKAHOE
RIVER

1. CAR-296

2. MD 328 over Tuckahoe Creek

3. Caroline Co, MD

4. Carolie Hall

5. 3/97

6. MDSHPO

7. roadway approach

8. 2 of 6

1. CAR-296

2. HD 328 over Tuckahoe Creek

3. Caroline Co, MD

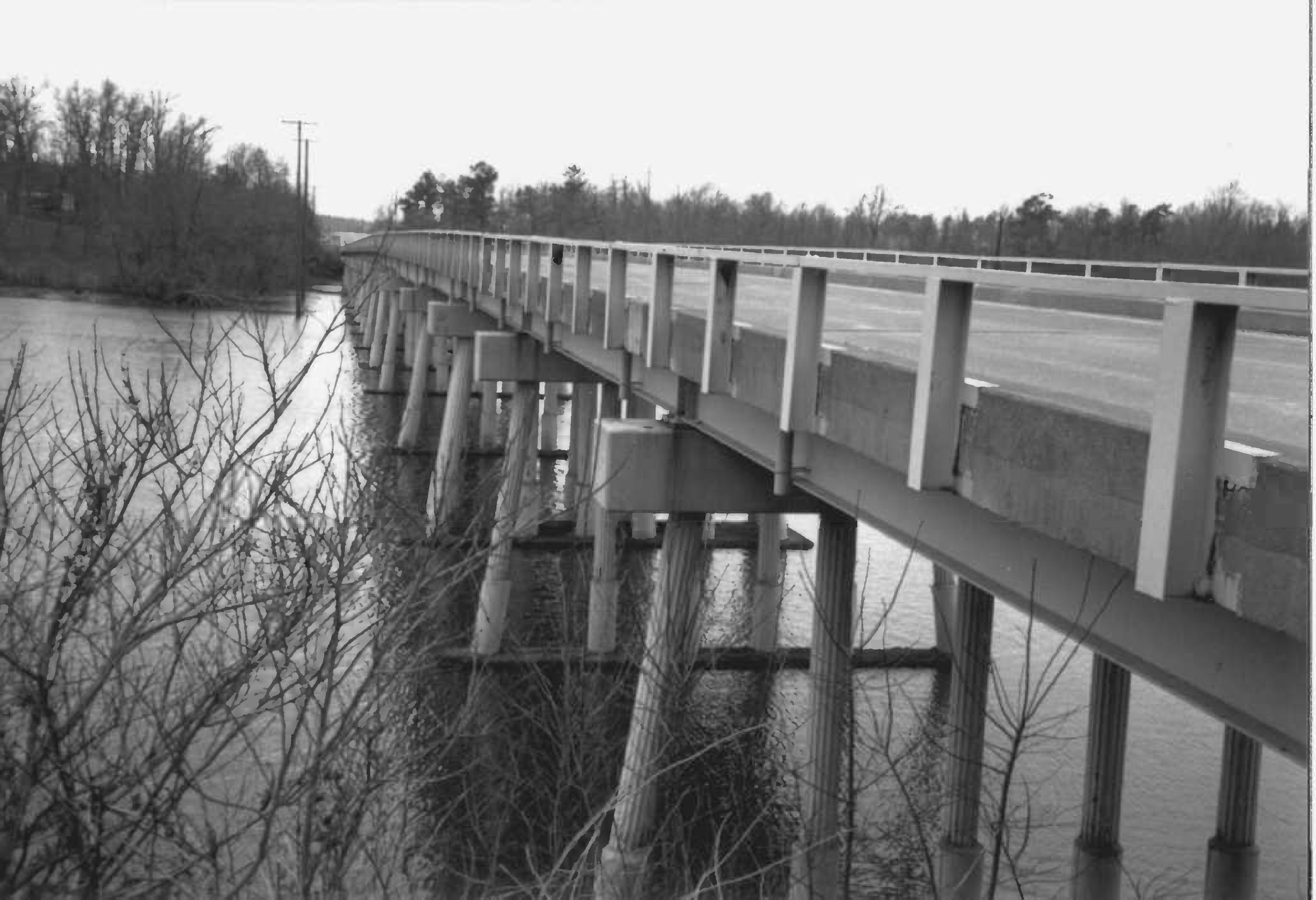
4. Carolie Hall

5. 3/97

6. MDSHPO

7. roadway approach

8. 2 of 6



1. CAR-296
2. MD 328 over Tuckahoe Creek
3. Caroline Co., MD
4. Caroline Hall
5. 3/97
6. MDSHPO
7. southside
8. 3 of 6


TUCKAHOE
RIVER


TUCKAHOE
RIVER

1. CAR-296

2. MD 328 over Tuckahoe Creek

3. Caroline Co, MD

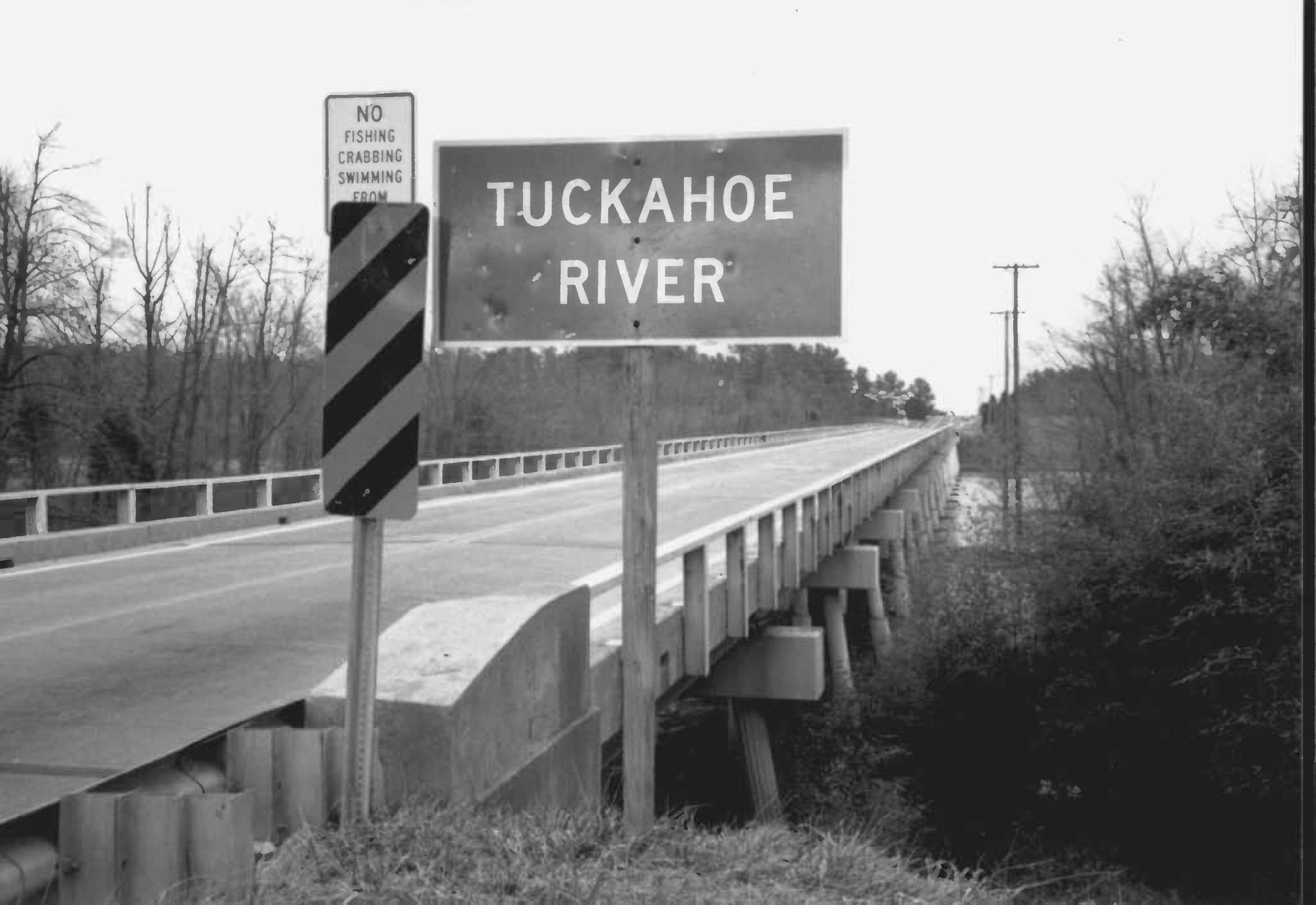
4. Caroline Hall

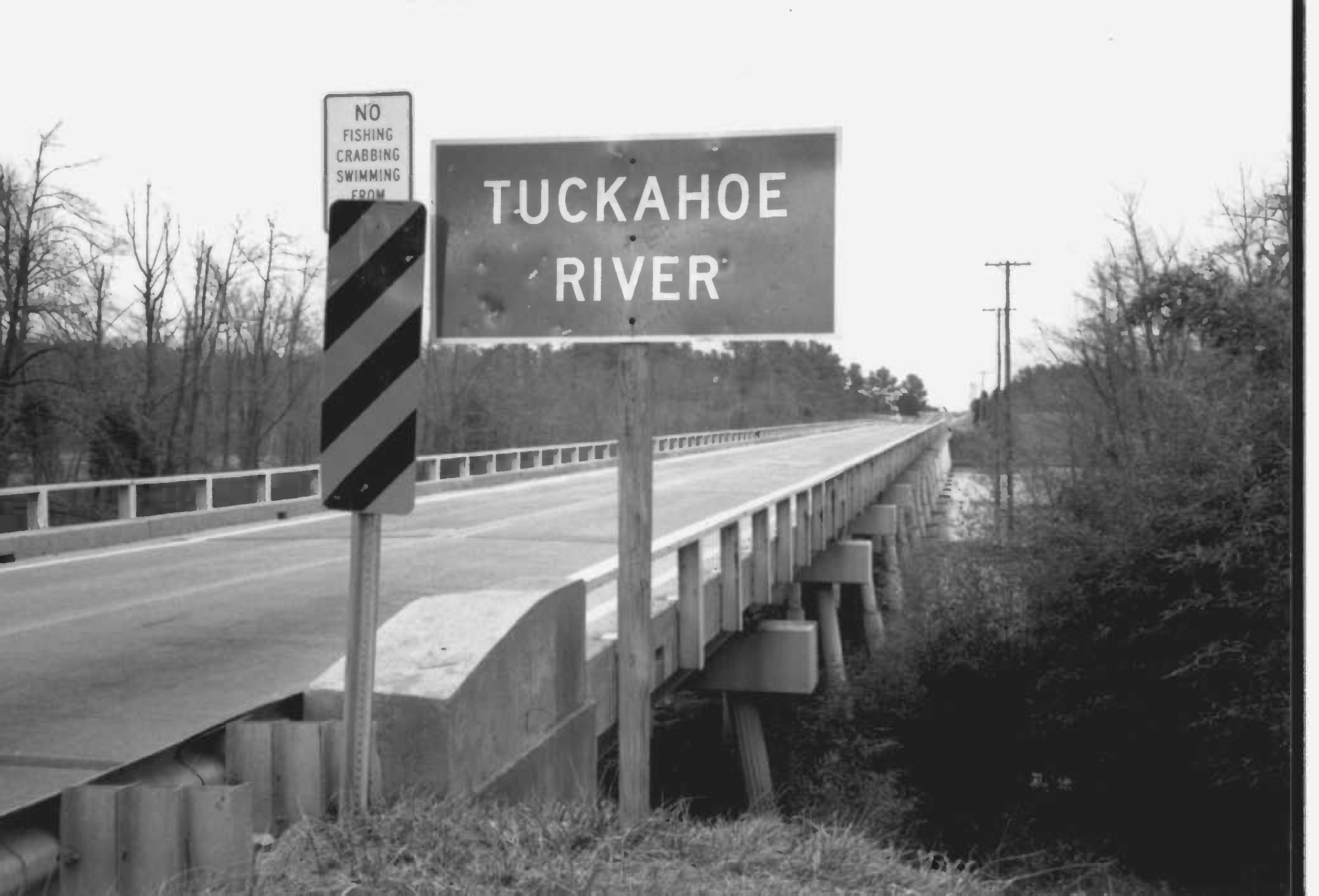
5. 3/97

6. MDSHPO

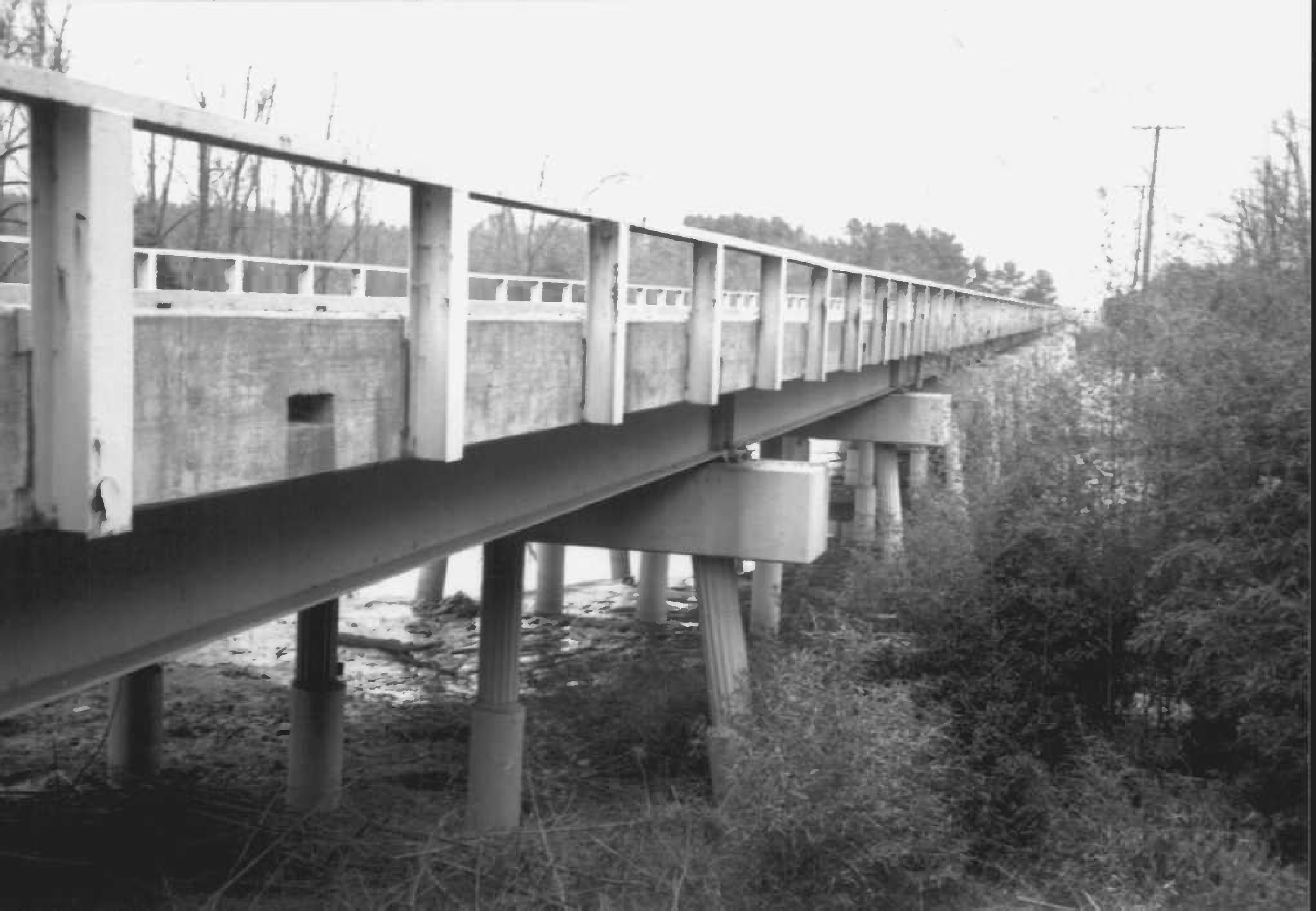
7. roadway approach

8. 4 of 6


NO
FISHING
CRABBING
SWIMMING
TUCKAHOE
RIVER


NO
FISHING
CRABBING
SWIMMING
TUCKAHOE
RIVER

1. CHR 396
2. MD 328 over Tuckahoe Creek
3. Caroline Co, MD
4. Caroline Hall
5. 3/97
6. MDSHPO
7. north side
8. 5 of 6



1. CAR-296
2. MD 328 over Tuckahoe Creek.
3. Caroline Co. MD
4. Caroline Hall
5. 3/97
6. MDSHPO
7. detail of substructure
8. 6 of 6